

Amendments to Abstract:

Please delete the Abstract, without prejudice, and substitute the following paragraph therefor:

A projection objective formed from six mirrors arranged in a light path between an object plane and an image plane is provided. The projection objective, in some examples, is characterized by having a physical distance between the vertexes of adjacent mirrors that is large enough to allow for the six mirrors to have sufficient thickness and stability properties to prevent surface deformations due to high layer tensions. In some embodiments, mirror thickness are such that surface deformations are prevented with mirrors having layer tensions lower than 350 MPa. Mirror surfaces may comprise multilayer systems of Mo/Be or Mo/Si layer pairs. In some examples, the physical distance between a vertex of the third mirror and a vertex of the sixth mirror (S3S6) satisfies the following relationship: $0.3 \times (\text{a used diameter of the third mirror } S3 + \text{a used diameter of the sixth mirror } S6) < S3S6$. In some examples, a ratio of a physical distance between a vertex of the first mirror and a vertex of the third mirror (S1S3) to a physical distance between the vertex of the first mirror and a vertex of the second mirror (S1S2) is within the range of: $0.5 < S1S3/S1S2 < 2$. In some examples, the physical mirror surfaces of the mirrors have a rotational symmetry with respect to a principal axis (PA). In some examples, all physical mirror surfaces are aspherical. In some examples, at most five physical mirror surfaces are aspherical. Other examples are provided, along with microlithography projection exposure apparatuses and processes for producing a microelectronic device.